



Australian and New Zealand College of Veterinary Scientists

Fellowship Examination

June 2018

Feline Medicine

Paper 1

Perusal time: **Twenty (20)** minutes

Time allowed: **Four (4)** hours after perusal

Answer **ALL FIVE (5)** questions

All five (5) questions are of equal value.

Answer **FIVE (5)** questions, each worth 48 markstotal 240 marks

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Paper 1: Feline Medicine

Answer all five (5) questions

1. Answer **both** parts of this question:
 - a) Discuss the current understanding of the pathogenesis of feline idiopathic cystitis (FIC), also known as feline interstitial cystitis, feline urologic syndrome (FUS) and idiopathic feline lower urinary tract disease (FLUTD). (33 marks)
 - b) With reference to the literature, briefly outline the rationale of the following treatments for FIC:
 - i glycosaminoglycans (GAG) supplements (5 marks)
 - ii feline pheromones (5 marks)
 - iii multi-modal environmental modification (MEMO). (5 marks)

2. The treatment of hyperthyroidism can be complicated by iatrogenic hypothyroidism and azotaemia. Discuss, with reference to recent literature, the following statements:
 - a) Incidence of azotaemia after treatment for hyperthyroidism. (5 marks)
 - b) Clinical significance of iatrogenic hypothyroidism, with **and** without azotaemia. (15 marks)
 - c) Pathophysiology of azotaemia after treatment for hyperthyroidism. (14 marks)
 - d) Diagnosis of iatrogenic hypothyroidism. (14 marks)

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3. Answer **all** parts of this question:

- a) Outline the current understanding of the immunologic basis of feline lower-airway disease associated with reversible airway constriction: 'feline asthma'. You may include diagrams. (30 marks)
- b) With reference to this aberrant immune response, briefly describe the mechanism of action of the following treatments for feline asthma:
 - i glucocorticoids (7 marks)
 - ii leukotriene receptor inhibitors (3 marks)
 - iii antihistamines. (3 marks)
- c) Explain why environmental irritants may worsen the clinical signs of feline asthma. (5 marks)

4. Answer **both** parts of this question:

- a) Describe the pathogenesis of jaundice under the following categories:
 - i pre-hepatic (8 marks)
 - ii hepatic (10 marks)
 - iii post-hepatic (8 marks)
 - iv associated with feline infectious peritonitis. (2 marks)
- b) Describe the physiologic effects of hyperbilirubinaemia on a cat. (20 marks)

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5. Answer **all** parts of this question:

- a) Describe the life cycle and transmission of *Toxoplasma gondii* in cats. Discuss the clinical signs of infection at **each** stage of the life cycle. (20 marks)

- b) Describe the antibody kinetics of infection with *Toxoplasma gondii* in cats **and** the impact they have on the serological diagnosis of clinical toxoplasmosis. (15 marks)

- c) Discuss the factors that are known to predispose cats to recrudescent clinical toxoplasmosis and the principles that should be considered when trying to prevent such complications. (13 marks)

End of paper



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Paper 2

Perusal time: **Twenty (20)** minutes

Time allowed: **Four (4)** hours after perusal

Answer **ALL FIVE (5)** questions

All five (5) questions are of equal value.

Answer **FIVE (5)** questions, each worth 48 markstotal 240 marks

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Paper 2: Feline Medicine

Answer all five (5) questions

1. Answer **all** parts of this question:

- a) List the diagnostic possibilities in a cat presenting with generalised seizures. *(10 marks)*

- b) Describe in detail, an appropriate approach to the initial stabilisation and investigation (in the first **two (2)** hours after presentation) of a two-year-old domestic shorthair cat presenting in status epilepticus. Briefly outline the further diagnostic tests that should be considered once the cat has been stabilised. Include in your answer the justification for the recommended treatments and investigations. *(20 marks)*

- c) Briefly outline the long-term treatment options for **each** of the following conditions in a cat **not** currently having seizures. Suggest and justify preferred treatment option(s):
 - i Refractory idiopathic epilepsy. *(6 marks)*

 - ii Severe hypoglycaemia (blood glucose 1.5 mmol/L) due to insulin overdose. A ten times overdose (ten units of glargine insulin instead of one unit) had been accidentally administered, **three (3)** hours previously. *(6 marks)*

 - iii Primary erythrocytosis (polycythaemia rubra vera). *(6 marks)*

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2. Discuss an appropriate management plan for the following scenarios. With reference to the literature, include in your answer any evidence that supports your answer.

Answer **all** parts of this question:

- a) A two-year-old, male, neutered, domestic shorthair, indoor cat from a single-cat household presented with inappetence and lethargy. He was diagnosed with 'dry' feline infectious peritonitis (FIP) on the basis of a mild, non-regenerative anaemia, marked hyperglobulinaemia, enlarged mesenteric lymph nodes on ultrasound, positive immunocytochemistry and spike polymerase chain reaction (PCR) from samples of enlarged mesenteric lymph nodes. (16 marks)
- b) An outbreak of virulent, systemic calicivirus in a rescue cattery. In your answer, include treatment of the affected individuals (8 marks) **and** broader management of the cattery (8 marks).
- c) A five-month-old Bengal kitten with diarrhoea, that has been diagnosed with *Tritrichomonas foetus* on faecal PCR. The patient is an indoor cat residing with two adult domestic shorthair cats. (16 marks)

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3. A 10-year-old, neutered, male Burmese cat was referred to your clinic. The patient had no history of vomiting, diarrhoea or inappetence until an acute onset of vomiting two weeks earlier. The vomiting has resolved with supportive treatment, but the patient has remained persistently inappetent. Haematology and biochemistry revealed mild, normocytic, normochromic anaemia and moderate neutrophilia. Abdominal radiographs were normal and an abdominal ultrasound by a specialist radiologist did not reveal any abnormalities. A feline pancreas-specific lipase test (snap fPL) was positive. The patient has been referred for evaluation of suspected pancreatitis.

Answer **all** parts of this question, in relation to this case:

- a) Discuss, with reference to the literature, the available diagnostic tests for feline pancreatitis and how they may assist in reaching a definitive diagnosis in this case. Include in your answer the limitations of **each** diagnostic test discussed. (24 marks)
- b) Describe the histological changes expected in **both** acute and chronic pancreatitis. (5 marks)
- c) Discuss the role of intercurrent disease on the development of feline pancreatitis. (19 marks)
4. Citing relevant literature where appropriate, discuss the evidence to support the use of the following drugs in the management of acquired heart disease in cats. Your answer should include justification of the criteria that should be used to decide when their use is appropriate, their mechanism of action, any side effects or contraindications, and relevant, pharmacokinetic information pertaining to their use.

Answer **all** parts of this question:

- a) Pimobendan. (24 marks)
- b) Angiotensin-converting enzyme inhibitors. (14 marks)
- c) Torasemide. (10 marks)

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5. A 15-year-old, male, neutered domestic shorthair cat is referred for management of several co-morbidities. The cat had been diagnosed with inflammatory bowel disease on histopathology five years earlier and was managed with an antigen-restricted diet (chicken and rice commercial) and intermittent prednisolone treatment.

More recently, the cat had re-presented with weight loss (0.5 kg over the preceding six months) and intermittent vomiting, diarrhoea and inappetence of three weeks duration, which has not resolved with current treatment of 1 mg/kg prednisolone per os once daily. The cat is presumed to have osteoarthritis, based on a history of difficulty in jumping and reduced mobility. On observation, the cat has a stiff gait. Physical examination supports a diagnosis of osteoarthritis that is felt to be having a significant impact on the cat's quality of life. Further investigation of this condition has been declined.

The cat has been diagnosed with International Renal Interest Society's (IRIS) stage 2 chronic kidney disease (urine specific gravity 1.020; serum creatinine 220 $\mu\text{mol/L}$ [RR. 78-120], urea 12.5mmol/L [RR. 5.9-10.6]). The urine protein: creatinine ratio is 0.7 with a benign sediment examination and the urine culture is negative.

Additional clinicopathological abnormalities include a mild non-regenerative anaemia PCV 20%; (RR. 25–45) and hyperphosphataemia at 2.79 mmol/L (RR. 1.45–2.62 mmol/L). The remainder of the haematology and biochemistry, including total T4 and fPL are within normal limits.

Systolic blood pressure (Doppler) is approximately 200 mmHg when measured on several occasions.

The remainder of the physical examination is unremarkable.

Abdominal ultrasound showed bilateral, mild reduction in renal size with cortical thickening, and hyperechogenicity associated with a reduction in corticomedullary definition. The renal pelvis was unremarkable. There was mild, diffuse, small-intestinal thickening (4 mm; normal <2.8 mm) with preservation of normal layering. No other abdominal abnormalities were identified.

Outline logical, short- **and** long-term management recommendations for this case (further investigations do **not** need to be discussed). Your answer should include discussion of the decision-making process for the treatment recommendations, the potential risks **and** benefits of any management strategies recommended, **and** considerations for ongoing monitoring of the patient. References to the relevant literature should also be included. (48 marks)

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